LOCKING BAND FOR CONTAINERS

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This invention relates to an improved locking band especially adapted for use on fiber containers having an upper metal chime upon which a cover will be removable secured.

A locking band of the character involved is disclosed in United States Letters Patent 2,579,975, issued to Harry A. Scott et al. on December 25, 1951. Although this disclosed band functions to retain the cover on the container, it has been found that it may have relative rotation on the chime of the container upon which it is mounted. This relative movement is especially undesirable when a workman attempts to relocate a filled drum during loading or unloading on freight cars, trucks or loading platforms where he tilts the drum on its lower edge and by grasping the locking band attempts to roll the drum on said lower edge. Due to the free rotation of the band, the workman will only rotate the band on the chime and the drum cannot be readily rolled in this manner. Various factors result in the loose fit of the locking band on the drum, for example, variations in materials used in manufacture, wear and inaccuracies in forming dies, etc.

A primary object of this invention is to provide an improved locking band for retaining a cover on a container, the band including means preventing relative rotation of the band on the container with which it is used.

Another object of this invention is to provide an improved split-type locking band including a peripheral skirt for overlying a cooperating chime portion of a container upon which a cover is to be retained, the skirt including means placed in compression with an adjacent portion of the frame portion when the band is in a locked condition on the container whereby rotation of the band on the container is prevented.

A further object is to provide a novel locking band and container chime arrangement of the character stated wherein the peripheral skirt of the band terminates in an edge portion which is convoluted or scalloped to present circumferentially alternated high and low points, said low points being disposed to engage the chime and be placed under compression during the securing of the locking band, whereby to secure the band against turning movement relative to the chime.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawings.

In the drawings:

FIGURE 1 is an elevation of an upper portion of a container upon which the locking band of the invention is locked for retaining a cover thereon;

FIGURE 2 is an enlarged fragmentary section taken on line 2—2 of FIGURE 1 through a low point on the peripheral of the locking band;

FIGURE 3 is an enlarged fragmentary section taken on line 3—3 of FIGURE 1 through a high point on the locking band; and

FIGURE 4 is a vertical section of the locking band when removed from the container.

Referring to the drawings in detail an upper end portion of a cylindrical fiber board container is indicated generally at 5, the container being formed from a plurality of convoluted layers of heavy paper. The container wall 6 is formed with an inwardly turned rounded shoulder 7 continuing in a reverse bend portion 8 terminating in a vertical flange portion 9. Crimped about the upper end of the container is a reinforcing metal chime member 10 which includes a rounded shoulder 11 conforming to shoulder 7 of the container. The chime member overlaps the outer surface of the reverse bend portion 8 and the vertical flange 9 of the container, terminating in a reinforcing bend portion 12 on the upper edge of the vertical flange portion 9.

Indicated generally at 13 is a portion of a removable cover which includes a circumferential downwardly directed rib 14 to be received within the container body portion 18 and a downwardly opening peripheral groove or channel 15 into which the bead portion 12 extends.

The cover includes a downwardly directed peripheral flange 16 overlying the outer surface portion 17 of the chime member, the flange including a reverse bend lower edge portion or hem 18.

Indicated generally at 19 is a split clamping band for retaining the cover 13 on the container. The clamping band is operated by means of a lever-actuated device indicated generally at 20, complete structural details and operation of which are disclosed in detail in the before mentioned Letters Patent 2,579,975. Without going into these details, the mechanism 20 functions to expand or contract the band about the upper end of the container to permit the removal of the cover or to clamp the cover in a container closing, cover securing position.

The band 19 comprises a vertically disposed flat body portion 21 engageable against the lower edge hem portion 18 and continuing in an upper horizontal flange 22 terminating in a reverse bend or hem portion 23 engageable at 24 on the cover channel 15. Extending inwardly from the flat body portion 21 is a horizontal flange 25 engageable at 26 with the chime member. The flange 26 continues in an angularly depending skirt or flange portion 27 which is of an undulated or fluted configuration including high points 28 and low points 29. The high points 28 will be located in a plane at a fixed angle A downwardly and outwardly from the horizontal flange 26 when the clamping band 19 is in the locked position, which, when the cooperating parts are properly constructed, will dispose the high points 28 in close proximity to the adjacent shoulder 11 of the chime member.

The low points 29 as clearly shown in FIGURE 4, will be disposed below the high points a distance x, whereby when the band is locked or clamped, said low points will be placed under compression to engage the adjacent shoulder portion 11 of the chime member with very secure retaining friction and prevent rotation of the band and cover with relation to the chime member. Utilization of the novel clamping band will facilitate the ready movement of filled containers by tipping and rolling the same on their lower edge portions to thus overcome the shortcomings of the prior art previously referred to.

Although the expedient of an undulated, fluted or scalloped portion on the depending skirt of the clamping band for the purpose mentioned has been described in detail, expedients such as corrugations, serrations or the like are considered to be within the purview of this invention.

From the above description, it is readily apparent that the described clamping band will readily accomplish the objects and afford the advantages set forth. Various changes and modifications may be made in details of construction of the specifically described preferred embodiment without departing from the spirit thereof, such changes being limited only by the scope of the appended claims.

I claim:

1. An expansible and contractable clamping band for
3,054,548

retaining a cover on a container, said band comprising a
split ring member including a flat upright body and upper
and lower horizontal flanges for engaging portions of the
cover and container to prevent separation of the cover
from the container, said lower horizontal flange including
a depending skirt including means thereon for compres-
sibly and frictionally engaging cooperating portions of
the container at spaced points only when the band is con-
tacted to prevent relative rotation thereof on said con-
tainer, and means for drawing the ends of the split ring
member to secure the ring on a container and
cover assembly.

2. The structure of claim 1 in which said skirt means
comprises an undulated portion around said skirt, said
undulated portion including circumferentially spaced high
points, and low points disposed in a plane below that of
the high points and which will compressibly engage a
cooperating portion of said container.

3. In combination, a container including an annular
rounded shoulder below its upper edge, a chime member
embracing the upper edge of said container and said
shoulder, a cover member including a depending flange
extending about the upper edge of said chime member,
an expandable and contractable clamp band engageable
with said chime member and said cover for securing the
cover on said container, said clamp band including means
compressibly engageable on the chime member over said
rounded shoulder at spaced points only, and means for
contracting said band about said chime member to secure
the cover in assembly on the container and the band
against rotation relative to said chime member.

4. The combination of claim 3 in which said clamp
band means comprises a depending skirt including por-
tions disposed in a plane approximately coinciding with
the outer surface of said chime member at the rounded
shoulder, and circumferentially spaced portions on said
skirt disposed in a plane below that of the first mentioned
skirt portions to be compressibly engaged with said chime
member when the band is contracted.

5. The combination of claim 3 in which said clamp
band means comprises a depending skirt having an undu-
lated edge extremity presenting circumferentially spaced
high points, and low points disposed in a plane below
that of the high points and which will compressibly en-
gage the chime member over said rounded shoulder por-
tions.

6. In combination, a container having an upper edge
and an annular rounded shoulder below said upper edge,
a chime member embracing said container upper edge
and shoulder, a cover member having a depending flange
extending about the upper edge of said chime member,
an expandable and contractable clamp band engaged with
said chime member and said cover securing said cover
on said container, said clamp band including a skirt ex-
tending downwardly at an angle to the portion of said
chime member over said rounded shoulder with a lower
edge of said skirt having spaced portions in localized
frictional engagement only with said chime member to
prevent relative rotation between said band and said
chime member, and means contracting said band about
said cover and said chime member.

7. In combination, a container having an upper edge
and an annular rounded shoulder below said upper edge,
a chime member embracing said container upper edge
and shoulder, a cover member having a depending flange
extending about the upper edge of said chime member,
an expandable and contractable clamp band engaged with
said chime member and said cover securing said cover
on said container, said clamp band including a skirt ex-
tending downwardly at an angle to the portion of said
chime member over said rounded shoulder, said skirt having a
lower edge with circumferentially spaced portions of said
lower edge projecting below the remainder of said
skirt lower edge, only said spaced portions being in
localized frictional engagement with said chime mem-
ber to prevent relative rotation between said band and
said chime member, and means contracting said band
about said cover and said chime member.

8. In combination, a container having an upper edge
and an annular rounded shoulder below said upper edge,
a chime member embracing said container upper edge
and shoulder, a cover member having a depending flange
extending about the upper edge of said chime member,
an expandable and contractable clamp band engaged with
said chime member and said cover securing said cover
on said container, said clamp band including a skirt ex-
tending downwardly at an angle to the portion of said
chime member over said rounded shoulder, said skirt
having an undulated edge extremity presenting circum-
ferentially spaced high points and low points disposed
in a plane below that of the high points and which
will compressibly engage the chime member over said
rounded shoulder portions.

9. In combination, a container having an upper edge
and an annular rounded shoulder below said upper edge,
a chime member embracing said container upper edge
and shoulder, a cover member having a depending flange
extending about the upper edge of said chime member,
an expandable and contractable clamp band engaged with
said chime member and said cover securing said cover
on said container, said clamp band including a skirt ex-
tending downwardly at an angle to the portion of said
chime member over said rounded shoulder with a lower
corner of said skirt engaging said chime member at spaced
intervals only and interlocking said band and said
chime member against relative rotation, and means
contracting said band and said chime member.

10. The combination of claim 9 wherein said skirt
lower edge is undulated in a vertical direction and the
engagement between said skirt lower edge and said chime
member is at spaced intervals only.

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